

ABSTRACT OF THE DISCLOSURE

The present invention provides isolated and purified genes which are differentially expressed during banana fruit development, and the protein products of these genes. The present invention further provides DNA regulatory elements which are differentially expressed during banana fruit development, chimeric genes comprising these DNA regulatory elements operably linked to heterologous DNA molecules, and plants transformed with said chimeric genes, providing for controlled expression of said heterologous DNA molecules during the development and ripening of the fruit of said plants, or in response to exogenous ethylene signals in said plants. The present invention also provides a method for expression of a heterologous protein in fruit comprising transforming fruiting plants with one or more chimeric genes according to the present invention, exposing said fruit to an endogenous or exogenous ethylene signal, and harvesting fruit containing said heterologous protein. The method of the present invention may further comprise isolated the proteins produced by said method from the harvested fruit. In a particularly preferred embodiment, the heterologous protein is a therapeutic protein, which may be isolated from the harvested fruit, or consumed directly in the transformed fruit by a patient in need of said therapeutic protein.